

Application No. 09/429,080
Amendment filed August 17, 2004
Reply to Office Action of March 18, 2004

Atty. Docket: 1794-0123P
Art Unit: 2878
Page 6 of 12

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1-4 are currently being prosecuted. The Examiner is respectfully requested to reconsider his rejections in view of the amendments and remarks as set forth below.

Rejection Under 35 U.S.C. § 112

Claims 1-4 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. This rejection is respectfully traversed.

Applicants have amended claims 1-3 in order to remove the problems pointed out by the Examiner. In regard to the "portion", this has now been specified to be one of a plurality of portions of the resistance layer and now provides correct antecedent basis. Regarding the currents, the photoelectric current has been specified as being the one that has a predetermined distribution. The reference to the sensing sections has been removed. The problems in claims 2 and 3 have likewise been corrected. Accordingly, Applicants submit that claims 1-4 are now definite and overcome the 35 U.S.C. § 112 rejection.

Application No. 09/429,080
Amendment filed August 17, 2004
Reply to Office Action of March 18, 2004

Atty. Docket: 1794-0123P
Art Unit: 2878
Page 7 of 12

Rejection Under 35 U.S.C. § 102

Claims 1-4 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Inoue (JP 5-118847). This rejection is respectfully traversed.

The Examiner states that Inoue shows a distance measuring apparatus having a plurality of photoconducting portions 3 in which electrical current is generated in response to incident light. The Examiner equates layer 27 with the resistance layer. The Examiner also points out electrode 29, which acts to remove a regular photocurrent corresponding to fixed light. In regard to claim 2, the Examiner points out diode 33. It is assumed that the Examiner meant to refer to diode 32, since element 33 is an exposure circuit.

The present invention differs greatly from the Inoue reference. In the present invention, the basic idea is to subtract a current density distribution over the entire photoelectric layer in order to compensate for background light. Thus, the main concept is not just applying a subtraction current to the photoelectric layer as a whole, but rather applying it according to a distribution into each of the portions of the layer.

Application No. 09/429,080
Amendment filed August 17, 2004
Reply to Office Action of March 18, 2004

Atty. Docket: 1794-0123P
Art Unit: 2878
Page 8 of 12

However, in the Inoue reference, at best, any current which is subtracted is done so to the device as a whole. Thus, the reference teaches that the electric current corresponding to fixed light is subtracted in sum total, while in the present invention, electric current is subtracted from each portion on a predetermined current density distribution.

The Examiner believes that the subtracted current cannot exceed the generated photocurrent due to diode 32 being oriented in an opposite direction of the ground diode, and thus finds that in the region where the generated photocurrent is lower than the fixed current, the subtracted photocurrent is equal to the generated photocurrent. However, the effect of this diode is to prevent a sum total current to be subtracted from exceeding the sum total of the photocurrent.

Furthermore, the regions described by the Examiner denote areas corresponding to terminal 22 or terminal 23. The concept of electric currents subtracted from each portion on a predetermined current density distribution cannot be obtained by this arrangement.

More particularly, the present invention subtracts the current having a certain distribution in a section where the photoelectric

Application No. 09/429,080
Amendment filed August 17, 2004
Reply to Office Action of March 18, 2004

Atty. Docket: 1794-0123P
Art Unit: 2878
Page 9 of 12

current density generated in each portion of the photoelectric layer is larger than a predetermined current density and also subtracts the current according to the distribution in a section where the photoelectric current density is smaller than the predetermined current density. The resultant current where the current density has been subtracted flows into the resistance layer where the light is present and effectively becomes zero in other portions. Accordingly, it is possible to determine which portions have bright incident light.

Further, the photoelectric current also causes an emission of a signal light using a marker LED. Therefore, when the image of the marker LED is large, the detection of the location of the brightest image can easily be performed.

In the reference, an exclusive channel is provided for drawing out the photoelectric current corresponding to the fixed light. The exclusive channel is divided into two electrodes, but the circuit subtracts fixed light current as a whole. Accordingly, the reference does not teach that the photoelectric current is subtracted based on a current density distribution. Accordingly, in the reference, the sum total of the subtracted current is equivalent to the sum total of the photoelectric current by the

Application No. 09/429,080
Amendment filed August 17, 2004
Reply to Office Action of March 18, 2004

Atty. Docket: 1794-0123P
Art Unit: 2878
Page 10 of 12

fixed light and the current to be subtracted is simply not allowed to flow into the resistance layer.

The Examiner is referred to paragraph [0040] of the reference where it is clearly described that the fixed light current is drawn out, while in the present invention, the device does not draw out the fixed light current but draws out photoelectric current from each portion on a predetermined current density. In the reference, the sum total of the subtracted current is made equivalent to the sum total of the photoelectric current by the fixed light. As a result, the current is subtracted in a large current density from a portion having high photoelectric current density and subtracted at a small current density from a portion having a low photoelectric current, by which the effect of the present invention cannot be obtained.

Furthermore, the diode 32 specified by the Examiner prevents the reverse current and does not draw out current when the voltage of the electrodes for drawing out the photoelectric current by the fixed light is low. The voltage of the electrodes for drawing out the photoelectric current is increased when the photoelectric current flows in the resistance layer. Therefore, the diode 32

Application No. 09/429,080 Atty. Docket: 1794-0123P
Amendment filed August 17, 2004 Art Unit: 2878
Reply to Office Action of March 18, 2004 Page 11 of 12

specified by the Examiner is now directly related to the photoelectric current density as in the present invention.

In view of this, Applicants submit that claim 1, as presently amended, is not anticipated by Inoue.

Claims 2-4 depend from claim 1 and, as such, are also considered to be allowable. In addition, these claims recite other features of the invention, making these claims additionally allowable. Accordingly, Applicants submit that claim 1-4 are allowable over the Inoue reference.

Conclusion

In view of the above remarks, it is believed that the claims clearly distinguish over the patent relied on by the Examiner. In view of this, reconsideration of the rejections and allowance of all of the claims are respectfully requested.

In the event that any outstanding matters remain in this application, the Examiner is invited to contact Robert F. Gnuse (Reg. No. 27,295) at (703) 205-8000 in the Washington, D.C. area.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), the Applicants respectfully petition for a two (2) month extension of time for

Application No. 09/429,080
Amendment filed August 17, 2004
Reply to Office Action of March 18, 2004


Atty. Docket: 1794-0123P
Art Unit: 2878
Page 12 of 12

filing a response in connection with the present application and the required fee of \$420.00 is attached herewith.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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By 
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1794-0123P

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